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ABSTRACT

A 60-item short form of the Minnesota Teacher Attitude Inventory (MTAI) was compared to the present form of 150 items to determine whether the same constructs are common to both sets of items. Correlations were computed between scores on the two forms for 675 undergraduate elementary, secondary, and all levels education majors yielding coefficients of .95, .97, and .95 respectively. The 60 items were factor-analyzed by major, and the dimensions were highly consistent with the results reported in the literature for experienced teachers. The results indicate that a revised form of the MTAI is necessary and feasible. (Author)

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An Investigation of a Short Form of the Minnesota Teacher Attitude Inventory

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Abstract

A 60-item short form of the Minnesota Teacher Attitude Inventory (MTAI) was compared to the present 150 items to determine whether the same constructs are common to both sets of items. Correlations were computed between scores on the two forms for 675 undergraduate elementary, secondary and all levels education majors yielding coefficients of .96, .97 and .96 respectively. The 60 items were factor analyzed by major and the dimensions were highly consistent with the results reported in the literature for experienced teachers. The results support the idea that a revised form of the MTAI is necessary and feasible.

Twenty-five years have passed since Cook, Leeds and Callis (1951) published the Minnesota Teacher Attitude Inventory (MTAI) which was "designed to measure those attitudes of a teacher which predict how well he will get along with pupils in interpersonal relationships". Attitudes which teachers have toward children and the education process were assumed to be important predictors of the type of social atmosphere maintained in the classroom. Further, the authors stated that the MTAI can be used "in the selection of students for teacher preparation and the selection of teachers for teaching positions."

Construction of the original MTAI started with the classification of 378 items into five general categories (Leeds, 1950). In the first and largest category, items dealt with the teacher's recognition or nonrecognition of students as individuals with their own rights. Items concerned teacher attitudes about adult-imposed standards on children's behavior. The second set of items were statements about discipline and focused on problems of student conduct and ways of handling these problems. The third group of statements concerned knowledge about child growth and development principles. In the fourth category, items pertained to educational principles relevant to school philosophy, methods and administration. The last group of items were related to the personal likes, dislikes

and irritations of the teacher. These categories were created in an attempt to identify psychological factors latent in teachers' opinions. Leeds (1950) suggested that the first and last categories were affective in nature while the remaining three sets of items were more cognitive.

Two forms of the instrument were developed from 378 p pairs of positively and negatively stated items. Both forms were administered to a criterion group of 100 superior and 100 inferior teachers as a basis for selecting the final set of questions. Items in the present instrument w were selected according to how well each discriminated between the two extreme groups of teachers. Norms were established using the total score which was assumed to be unidimensional and representing a continuum from democratic to autocratic attitudes towards the instructional process.

Since 1951 the MTAI has been a popular instrument for research on teacher effectiveness and personality characteristics (Getzels and Jackson, 1963; Kahn and Weiss, 1973). Buros (1965) lists 155 references for the MTAI. Although many research studies have used the MTAI, few investigations have focused on the construct validity of the instrument. Horn and Morrison (1965) questioned the unidimensionality of the MTAI and a factor analysis of scores for college students enrolled in undergraduate education

courses identified five factors defined by 73 items. Yee and Fruchter (1971) conducted a similar factor analysis using experienced teachers with an average of ten years of teaching. In gereral, the two studies demonstrated high agreement on factors I and III and moderate agreement on factor II. Factors four and five account for little variance and are not readily identifiable. Shores and Edwards (1975) factor analyzed the scores of 900 education majors and found high agreement with the factor structure reported by Yee and Fruchter.

Yee and Fruchter defined factor I as representing children's irresponsible tendencies and lack of self discipline which is similar to Leed's (1950) first category representing the rights of children relative to imposed standards. Factor II was identified as a dimension of conflict between teacher and pupil interests. Factor 3 is concerned with discipline and the rigidity and severity in handling pupils. Some of these factors are very similar to the rationale used by Leeds (1950) to classify items into categories.

These results indicate that the MTAI is multi-dimensional and that the factors are stable for different populations, namely, student teachers and experienced teachers. In addition, the evidence suggests that fewer than the present 150 items can be used to identify the five factors.

Consequently, the MTAI needs to be updated, revised, and new items written to provide a more coherent interpretation of factors IV and V. This procedure is consistent with the recommendations in the Standards for Educational and Psychological Tests (1974) which advocates that tests and manuals be revised when new research evidence and/or changes in social conditions raise questions about the validity of the instrument.

The objectives of this investigation are part of a larger project to revise and validate a shorter version of the MTAI. Specifically, the first objective was to determine whether the 60 items identified by Yee and Fruchter can give the same information as 150 items. Secondly, the factor structure of the 60 items for different levels of prospective teachers was compared to identify the degree of similarity with the factors obtained by Yee and Fruchter for 150 items.

Method

The MTAI was administered in the Fall, 1974 and Spring 1975 to students entering the teacher education program at the University of Houston. Each student had designated a primary field of teaching and for this study was classified as elementary, secondary, or all levels major. A category of all levels was used to include students preparing to teach

music, art or physical education at many grade levels. A total of 736 students were tested of which 331 were elementary majors, 209 secondary majors, and 135 all level majors (60 students could not be classified by major).

The analysis was conducted in two phases. First, the data were analyzed to determine whether the 60 items identified by Yee and Fruchter could be used as the basis for a short form of the MTAI. Correlations were computed between scores on the 60 items and 150 items for each of the three types of students. Secondly, the factor structure of the 60 items was investigated for each of the three teaching areas. An alpha factor analysis with a varimax rotation procedure was used to extract five dimensions. These procedures allow a separate comparison of the factor structure for elementary, secondary and all levels students with the factors reported by Yee and Fruchter. Also a separate factor analysis was computed for each group of students by semester; that is, no distinction was made between majors.

Results and Conclusions

The correlations between the total number of items (150) and the short form containing 60 items were .96, .97 and .96 for elementary, secondary, and all levels majors, respectively. From a prediction standpoint, this means that scores on the short form can account for 90 percent of the variability in total MTAI scores. Correlations between the 60 items and the

remaining 90 items were .88, .90 and .88 for the same groups. The high correlations between the two subsets of items are further evidence that the 60 items are representative of the 150 items. Additional support for a shorter form was found in which a subset of 75 items provided higher validity than 150 items (Leeds, 1969). Scores from beginning teacher education students on the 25 items were a better predictor of their future teaching effectiveness than the total score. These results suggest that a valid short form can be developed.

Factor analysis of the 60 items produced five factors accounting for 30 percent of the total variance. Table 1 demonstrates high agreement with Yee and Fruchter's first 3 factors for all groups, elementary, secondary and all levels. Less agreement exists on factors 4 and 5. The results of the factor analysis for students grouped by semester are presented in Table 2. Again, there is high agreement with the data reported by Yee and Fruchter.

This evidence demonstrates that the MTAI is multidimensional and that the interpretation of a total score may not be meaningful. When items are summed and interpreted, the first factor is most dominant and a loss of information occurs by disregarding the remaining constructs. Since the covarying patterns of items were obtained from beginning teacher education students the factor structure appears to be

generalizable to experienced teachers as well as to education students of different majors.

In general these results indicate that the 60 items are a good representation of the total 150 items in terms of factor structure and overall content. However, this author suggests that much more research is necessary before a final short form is completed. For example, there were 8 items which did not load on the corresponding factors identified by Yee and Fruchter. These items may be unique to experienced teachers or they may not be theoretically important items. Before a final short form is completed, items must be deleted, added and revised. This is especially true if factors 4 and 5 are to be interpreted meaningfully.

Concurrently, a theoretical structure is essential for the interpretation of factors for training teacher education students. Items which presently comprise the MTAI were selected according to how well they discriminated between designated extremes of teachers and not according to a theoretical rationale. Therefore, the interpretation of factors is more difficult because some items are not obviously related to a latent dimension. A short form of the MTAI should be developed from a theory of student-teacher interpersonal relationships.

The MTAI has been and probably will continue to be a popular instrument in research on the affective behavior of

teachers. Getzels and Jackson (1963) concluded that "the importance of understanding teacher attitudes would certainly justify any efforts to make the MTAI more meaningfull". Horn and Morrison (1965) state that from a theoretical level, "it is to be expected that more than one dimension is necessary to describe the ways in which teachers orient to a classroom situation". Enough evidence is available which indicates that the MTAI is multidimensional and that a shorter form of the 150 can measure these factors.

TABLE I

Number of Items from a Factor Analysis of the Short Form by Major Which Agree with the Factors Reported by Yee and Fruchter

	Number of Items Per Factor Found by Yee And Fruchter				
Major	Factor 1 20 Items	Factor 2 15 Items	Factor 3 12 Items	Factor 4 7 Items	Factor 5 6 Items
Elementary	15	13	10	4	1
Secondary	16	12	9	4	2
All Levels	16	13	11	1	5

TABLE 2

Number of Items from a Factor Analysis of the Short Form by Semester which Agree With The Factors Reported by Yee and Fruchter

	Number of Items Per Factor Found by Yee and Fruchter				
Semester	Factor 1 20 Items	Factor 2 15 Items	Factor 3 12 Items	Factor 4 7 Items	Factor 5 6 Items
Fall	16	14	10	4	5
Spring	15	13	10	4	4

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